

REMARKS

Claims 1-17, 19-21, 23, 25-35 and 37-39 are still pending in the application. Claims 1-17, 19-21, 23, 25-35 and 37-39 stand rejected in the Office Action mailed January 13, 2003. Claims 8 and 23 were not explicitly rejected by the Examiner but the Office Action evidences that this was the Examiner's intention. The Examiner is requested to clarify this matter in her next communication to applicant. Claims 4, 5 and 9 are objected to as being dependent upon a rejected base claim but would be allowable if rewritten in independent form including all the limitations of the base claims and any intervening claims. The applicant wishes to extend their thanks to the Examiner for her indication of allowable subject matter.

Applicants respectfully request that the above-identified application be reconsidered in view of the remarks which follow, and that each of the presently pending claims be allowed and the application be passed to issue.

35 USC 103

Claims 1-3, 6, 7, 14, 15, 19-21, 25-28, 30-35 and 37-39 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Weaver et al in view of Adams et al. The Examiner avers to have intended to also include claims 8 and 23 in the rejection but has inadvertently omitted this claim in his listing but treated claims 8 and 28 in the body of item number #2 in the Office Action. Presently,

Claim 1 recites

"... a monolithic hard insert being affixed to the bit body at the axial forward end thereof, and the hard insert presenting at least three discrete leading cutting edges for cutting the earth strata wherein each said at least three cutting edges is stepped."

The Examiner, in the body of her rejection, identifies element 18 as corresponding to applicant's claimed limitation of a hard insert. The specification in column 1 lines 3-10 identifies element "18" as "an upper shank end or portion 18 to which the bit body and collars are attached...". The Examiner is requested to clarify her correspondence of the elements in Weaver to the claim limitations. Possibly the Examiner intended to identify the blade 14, column 3 lines 3-10, in Weaver as the insert, the blade includes the lower portion 18 and an upper portion, the blade is connected/inserted onto a "bit body," see column 2 lines 47-53. The blade 14 extends from the lower portion 18 to the distinct "leading cutting edges (26) that are stepped," see body of Examiner's rejection.

The Examiner admits that Weaver et al does not disclose a hard insert that is monolithic; the blade 14 (hard insert) includes separate carbide inserts along its cutting portion. The Examiner however takes the position that under 35 USC 103, it would have been obvious to modify Weaver to have a "...monolithic hard insert as taught by Adams in order to have a bit that did include separate pieces that may be sheared off during drilling thus increasing the life of the bit." The applicant believes that the Examiner's position is not well-founded.

The drill bit in Adams is not monolithic; it is not a uniform material. The bit in Adams comprises of a body portion and a cutting portion made from a different material; the cutting portion is inserted into the web, see column 4, lines 50-58. The cutting portion is made from a refractory carbide that can be inserted into a groove and brazed into place, see column 4 lines 26-30. In each of Adams illustrated embodiments, a separate cutting portion is illustrated that

spans across the diameter of the drill and is attached to the bit body.

Just like in Weaver, the hard drill bit insert in Adams is formed by brazing carbide cutting edges to a drill bit body. The cutting edges in Weaver et al. are formed by a plurality of separate inserts 24 made from tungsten carbide as described in column 3, lines 3-15. The inserts 24 in Weaver are received in recesses forged in the blade 14. The inserts 24 are secured to the blade 14 by a shim of soldering material, column 7, lines 25-47. The monolithic blade 14 in Weaver et al., forged as one piece, does not form the cutting edges of the bit. The cutting edges are formed by a plurality of inserts 24. Similarly the cutting edge portion in Adams et al is not monolithic as this term is commonly understood and defined. As commonly defined, a monolith, in the *Random House Dictionary*, is defined as having total uniformity. Neither Weaver nor Adams teach a hard drill bit insert that has a uniform composition; in both instances the cutting edge is made from a harder material than the material used to make the remaining portion of the hard insert body. Neither reference teaches or suggests constructing the hard insert to be monolithic as claimed. The Examiner has failed to establish a proper *prime facie* case of obviousness under 35 USC 103. Accordingly, it is submitted that claims 1, 19, 23, 32 and 37 are allowable over the prior art of record. Accordingly claims 2, 3, 6, 7, 8, 14, 15, 20, 21, 25-28, 30, 33-35 and 37-39, which depend on claims 1, 19, 23, 32 and 37, should also be allowed.

Claims 10-12, 16, 17 and 29 stand rejected as being unpatentable over Weaver, in view of Adams and Brady. Claims 10 and 29 recite each one of the leading surfaces of the cutting edge having a rake angle of between 0-15 degrees.

The Brady patent does not disclose a hard insert having three discrete leading cutting edges. The Weaver patent discloses a hard insert having three cutting edges whereas Brady discloses a solution to tensile load fractures that occur on two cutting edge prior art roof bits; such prior art is illustrated in Figures 1A-2C of Brady. It should also be noted that the cutting edges in Brady are independent and separate elements. The applicant is using impermissible hindsight in combining Brady with Weaver and Adams. Accordingly, it is submitted that claims 10-12, 16, 17 and 29 are allowable over the prior art of record.

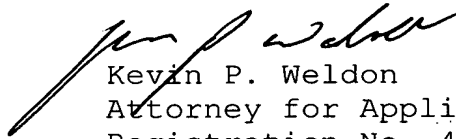
Claim 13 is rejected under 35 USC 103(a) as being unpatentable over Weaver, in view of Adams and Nance. Claim 13 recites the upper step of the cutting edges hard insert as being 30 degrees and the lower step cutting edge having a relief angle of 21 degrees. The Examiner takes the position that it would have been obvious to one of ordinary skill in the art at the time the invention was made, to have formed the cutting edges of the steps in Weaver, as modified by Adams, to have a cutting edge upper step with a relief angle of 30 degrees and the relief angle of the cutting edge lower step to have a relief angle of about 21 degrees as taught by Nance. The Examiner making an improper extrapolation by combining Nance, a two cutting edge roof bit, with Weaver a three cutting edge roof bit which has unique and distinct characteristics. Further, Nance does not disclose "stepped" cutting edges. The cutting edges in Nance at 30 and 34 are not relatively stepped but angled in relation to each other. The applicant is using impermissible hindsight in combining Brady with Weaver and Adams. Accordingly, it is submitted that claim 13 is allowable over the prior art of record.

In view of the above amendments and comments, it is believed that claims 1-17, 19-21, 23, 25-35 and 37-39 are

patentable over the art of record. Thus, applicants respectfully request a Notice of Allowance indicating claims 1-17, 19-21, 23, 25-35 and 37-39 as being allowable. If for any reason the Examiner does not believe that the application is in condition for allowance, the Examiner is requested to telephone applicants with any comments or questions (724-539-3848) in order to expedite prosecution of the application.

The Commissioner is hereby authorized to charge any fees, including additional filing fees required under 37 CFR 1.16 and 1.17, and fees for extension of time, in connection with this submission to Kennametal Inc. corporate Deposit Account 11-0508.

Respectfully submitted,



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